10^{11} Ω/□ or less or less, and a Y value thereof obtained by 5 degree specular reflectance of 4.0% or less is obtained.

As a result of the claimed configuration, an anti-static film is provided with a hard coat layer having superior optical and physical properties, and anti-static properties are maintained. Additionally, reflectivity is reduced and interference uneveness is prevented.

The anti-static film for a display according to the present invention is characterized in that a hard coat layer is provided on the surface of a transparent substrate directly or via another layer. The hard coat layer includes at least UV curable resin, a conductive material, and low refractive index material. A surface electric resistance thereof is 1.0×10^{11} Ω/□ or less, and the Y value thereof obtained by 5 degree specular reflectance is 4.0% of less. Thus, in the anti-static film of the present invention, a hard coat layer having superior optical, physical, and anti-static properties is formed by a coating material, in which the conductive material and the low refractive index material are dispersed in the UV curable resin. In particular, the anti-static film has superior adhesiveness between the transparent substrate and the hard coat layer, as well as superior durability such as wear resistance.

In contrast, Park discloses a composite coating having anti-reflective and anti-static properties. The composite coating is constructed by coating a high index first layer including ITO and a low index second layer including SiO_2 on a hard coat layer in order. (See for example, claims 1, 3, and 10-12 and also col. 5, line 23 - col. 6, line 22, col. 7, lines 26-31, col. 8, lines 9-18 and Fig. 1). Therefore, the composite coating disclosed by Park has a multilayer structure.

Additionally, in Park, thermosetting polysiloxane is used as a hard coat material in the hard coat layer. Therefore, there is no disclosure or suggestion of the UV curable resin recited in the present invention. Thus, the invention of Park is different from that of the present invention.

Furthermore, the reflectance shown in Fig. 2 of Park displays wavelength characteristics on the surface of the low index second layer (a SiO_2 layer). However, in the case in which a hard coat layer having light transparency is provided thereon, reflection on the interference between the low index second layer and a lower layer thereof affects the reflectance on the surface of the low index second layer, as shown in Fig. 1 of Park. Therefore, it is clear that reflectance of the low index second layer in the multilayer structure of Park, which consists of three layers is completely different from that of the hard coat layer in the monolayer structure consisting of one mixed layer of the present invention. Still further, because of the multilayer structure, Park cannot obtain superior adhesiveness, which is a benefit of the presently claimed invention, even if such multi-layer structure in Park is applied thereto.

Additionally, Park discloses that ITO is embedded into the hard coat layer by for example, a spin method, which is not a general coating method for a coating solution as is the method used in the present invention. Therefore, it is clear that the multilayer structure and the optical property of a coating film embedded by the spin method are different from those of a hard coat layer formed as a monolayer by coating material dispersing ITO and silica into resin, as in the present invention. Thus, Park fails to disclose or suggest the anti-static film for a display according to claim 1 of the present invention.

Still further, the Office Action took the position that although Park does not explicitly disclose the exact range of surface electrical resistance and the exact range of Y value obtained by 5-degree specular reflectance, the ranges taught by Park are within respective claimed ranges, as shown in Fig. 2 of Park. The Office Action asserted that it would have been obvious to one of ordinary skill in the art to use the claimed ranges of the present invention for surface electrical resistance and 5-degree specular reflectance. However, the Office Action has failed provide motivation as to why one of ordinary skill in the art would be compelled to make such a modification. Therefore, Applicants submit that this is impermissible hindsight because the only rationale for making such a combination was gleaned only from Applicants' specification.

Additionally, upon review of Applicants' specification, it is discussed that when the surface electric resistance of the hard coat layer exceeds 1.0×10^{11} ohms per square, a superior anti-static property is not obtained, and in addition, when the Y value exceeds 4.0%, a problem occurs in which interference unevenness is substantial. Therefore, in accordance with MPEP § 2144.05(III), Applicants' specification attributes a specific purpose to these ranges. Thus, these ranges are not mere design choices.

Claim 3 of the present invention further recites that the low refractive index material is contained at 15 to 200 weight parts to 100 weight parts of the conductive material. When the mixing ratio is below 15 weight parts, refractive index of the hard coat layer is insufficiently lowered, and therefore interference unevenness cannot be improved. Thus, according to the present invention, by setting the mixing ratio as claimed, interference unevenness on the surface can be improved without affecting the anti-static property.

In contrast, in the Office Action, it was asserted that the mixing ratio is shown in Table 1 in col. 8 of Park. However, the numerical values described in Table 1 of Park indicate concentrations of coating solutions, which are completely irrelevant to the mixing ratio.

Additionally, in Park, the thickness of the ITO layer and the SiO_2 layer are described. However, the mixing ratio is not described, and, in particular, the prevention effect of the interference unevenness has not been described or suggested. The mixing ratio between low refractive index material and conductive material specified in the present invention is not addressed by Park since the composite coating disclosed by Park contains low refractive index material and conductive material in different layers, respectively. Furthermore, it is clear that mixing ratio of materials in the multilayer structure of Park is completely different from that of materials in the monolayer structure consisting of one mixed layer of the present invention.

Therefore, Park fails to disclose or suggest an anti-static film for a display that includes a hard coat layer provided on the surface of a transparent substrate directly or via another layer, as recited in claim 1 Park also fails to disclose or suggest that the hard coat layer contains at least UV curable resin, conductive material, and low refractive index material and has a surface electric resistance of 1.0×10^{11} Ω/□ or less. The Y value thereof obtained by 5 degree specular reflectance is 4.0% or less, as further recited in claim 1.

In sum, Park fails disclose or suggest the present invention and also fails to achieve the benefits and advantages of the present invention. Thus, it is respectfully submitted that the Applicants' invention, as set forth in claims 1 and 3, are not obvious

within the meaning of 35 U.S.C. § 103.

Still further, as claims 2, and 4-10 depend directly or indirectly from claim 1, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least same reasons as discussed above.

The Office Action rejected claims 11-15 under 35 U.S.C. § 103(a) as being unpatentable over Park, as applied to claims 1, 2, 3, 4 and 7 above, in view of Hahn et al. (U.S. Patent No. 4,422,721, "Hahn"). This rejection is respectfully traversed.

As claims 11-15 depend directly or indirectly from claim 1, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least same reasons as discussed above.

Therefore, it is respectfully submitted that the Applicants' invention, as set forth in claims 11-15, is not obvious in view of any combination of Park and Hahn, within the meaning of 35 U.S.C. § 103.

Newly-added claim 16 further recites an anti-static film for a display, in accordance with claim 1, wherein said UV curable resin is UV curable acrylic resin.

Therefore, it is respectfully submitted that newly-added claim 16 is also patentable over the prior art.

Furthermore, as claim 16 is dependent upon claim 1, Applicants submit this claim recites subject matter that is neither disclosed nor suggested by the cited prior art, for at least the reasons set forth above with respect to claim 1.

If the application is not in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 108421-00013.**

Respectfully submitted,

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Enclosure: Marked-Up Copy of Amended Claims

MARKED-UP COPY OF AMENDED CLAIM

1. (Amended) An anti-static film for a display, comprising a hard coat layer provided on the surface of a transparent substrate directly or via another layer, wherein said hard coat layer contains at least UV curable resin, conductive material, and low refractive index material, surface electric resistance thereof is 1.0×1011 Ω/□ or less, and the Y value thereof obtained by 5 degree specular reflectance is 4.0% or less.

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